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AMSAT NEWS SERVICE
ANS-004

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:

ans-editor(a)amsat.org

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SB SAT @ AMSAT $ANS-004.01
SKN Nominations Due

AMSAT News Service Bulletin 004.01
   From AMSAT HQ SILVER SPRING, MD.
January 4, 2009
To All RADIO AMATEURS
BID: $ANS-004.01

Thanks in part to the AO-51 command team's support, activity in OSCAR SKN 2009 seemed at an all-time high. If you participated, please nominate someone you worked for Best Fist now, while you're thinking of it. Remember, your nominee need not have the best fist you heard, just the best of those you worked. Send your nomination to w2rs(a)amsat.org.

Tnx & 73,

Ray W2RS

[ANS thanks Ray Soifer, W2RS for the above information]

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SB SAT @ AMSAT $ANS-004.02
UNITEC-1

AMSAT News Service Bulletin 004.02
   From AMSAT HQ SILVER SPRING, MD.
January 4, 2009
To All RADIO AMATEURS
BID: $ANS-004.02

JAMSAT Announces Amateur Satellite to Venus

AMSAT has received news from Japan that JARL/JAMSAT are collaborating

with the Japanese University Space Engineering Consortium (UNISEC) to send an amateur radio payload into a Venus transfer orbit with the primary JAXA Planet-C Venus Orbiter mission planned for May, 2010.

UNITEC-1, developed by the teams who have already launched cubesats such as University of Tokyo's XI-IV, XI-V, and Tokyo Institute of Technology's CUTE-1, CUTE-1.7+APD has the following engineering missions:

1. Onboard computers developed by several universities will be tested in the harsh space environment in the form of a competition; i.e., the computer which can survive to the last in the radiation-rich deep space environment will win the competition.

2. Technologies to receive and decode very weak and low bit rate signal coming from deep space will be developed and tested.

3. Technologies to estimate orbit and signal Doppler shift of the satellite based on the received RF signal will be developed and tested. These technologies are essential for tracking and receiving signals from a satellite in deep space.

The UNITEC-1 team invites the support of amateur radio amateurs all around the world to participate in the receiving and data capture experiments in objectives 2 and 3, above. They note that amateur radio operators working as individuals or in groups develop stations and techniques to relay their received signal reports and data to the UNITEC-1 control station. This is also a unique opportunity to propose amateur experiments or competitions to the satellite team.

UNITEC-1 will transmit a signal consisting of a CW beacon of about 1 bps speed. One experiment requiring the participation of several amateur radio earth stations would include the development of infereometric techniques to combine the received signals from several antennae to improve the received S/N ratio from the spacecraft outbound from earth.

The UNITEC-1 website provides the latest mission information (such as orbit parameters, data formats and current status). UNITEC-1 will be the first university developed interplanetary satellite as well as the first amateur interplanetary satellite. The team sincerely hopes that UNITEC-1 will provide unique and exciting opportunity for the radio amateurs all over the world to enjoy reception of signals from deep space.

The UNITEC-1 website can be seen at:
http://unitec-1.cc.u-tokai.ac.jp/en/news_en

[ANS thanks Graham Shirville, G3VZV for the above information]

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SB SAT @ AMSAT $ANS-004.03
ESEO Project News

AMSAT News Service Bulletin 004.03
From AMSAT HQ SILVER SPRING, MD.
January 4, 2009
To All RADIO AMATEURS
BID: $ANS-004.03

Latest News From the AMSAT-UK/ESEO Project

AMSAT-UK reports it is getting ready to support the European

Student Earth Orbiter (ESEO) with on board transponder and
telemetry equipment. AMSAT will provide some of the satellite
communication functions and enable the ESEO flight operations
to access the Global Educational Network for Satellite Operations
(GENSO) and the worldwide amateur radio network.

The ESEO project is studying the implementation of some important
changes in requirements, in order to comply better with launch
opportunities to fly the satellite to low Earth orbit as a secondary
payload on one of the VEGA qualification flights. This essentially
involves a redesign to reduce the dry mass of the satellite and its
payload from about 120 kg (as per Phase B1) to a target of 75 kg,
while at the same time maintaining an architecture that will support
the key systems and functions of the satellite.

The development team consisting of 10 different universities and
AMSAT completed a workshop in December, 2008 which completed a
preliminary definition of the new ESEO configuration and the def-
inition of the corresponding preliminary system budgets (mass,
power, data links), as well as the identification of potentially
critical areas that will require further attention at a later date.

The Amateur Radio Payload is planned to include:

+ U/S Transponder - either FM voice and/or linear/with DSP
+ U/V Transponder - linear with DSP
+ C-Band beacon

Additionally, telemetry will be provided in a number of different
formats. The latest news can be found on the ESA Education website.
See: http://www.esa.int/SPECIALS/Education/

[ANS thanks Graham Shirville, G3VZV for the above information]

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SB SAT @ AMSAT $ANS-004.04
ISS Ops

AMSAT News Service Bulletin 004.04
   From AMSAT HQ SILVER SPRING, MD.
January 4, 2009
To All RADIO AMATEURS
BID: $ANS-004.04

The ISS operated with an uplink 0f 1269.650 MHz and downlink of
145.800 MHz. There have been many QSO's via this repeater mode
along with interesting reports about doppler effects, signal
strength etc. Many have been posting reception reports and comments
after successful contacts on the AMSAT-BB e-mail list for those of
us to enjoy that may not have the equipment to operate with. (Time
has been my bandit. ed. note)

Mike, N1JEZ reported, "I got on the ISS Repeater this morning during
the 1127 UTC pass here in Vermont FN34im. I took the opportunity to
play with doppler/power/antenna alignment/modulation etc. As suspected,
everything needs to be pretty much right on for good access. By paying
close attention to AZ/El and Doppler, I was able to hold the repeater
down to less than 5 degree El. Even at my power level, being 2-3 kHz
off seemed to be the maximum error on doppler. Power here was set at
approximately 5 kW EIRP. I did drop 10 dB and still got in as the ISS
passed overhead. My full power setup here includes 80 watts in the
shack to a 55 element 1269 MHz Directive Systems loop yagi. My trans-

mission line is 75' of 7/8" hardline."

Alan, WA4SCA said, "I have about 2500 watts EIRP on L-Band, minus some attenuation from trees, and could only bring it up above 45 degrees. the limiting factor seemed to be having enough radiated power to break the squelch. I determined that the uplink frequency needs to be properly centered. On AO-51 I can go ± 5 kHz and still get it, whereas with the ISS I got nothing, even around TCA. ± 3 kHz is probably more like it, and of course depends on your power."

Clare, VE3NPC wrote, "NA1SS heard my reply to his CQ and congratulated me on being the first station heard via L-band but unfortunately he didn't get my call right and I wasnt able to get in again on that pass." He was able to work N1JEZ and other stations on later passes.

Frank, IW4DVZ running and FT-736R + PA output of 40 watts on L-Band FM into antenna consisting 2x35 elements linear polarization and manual doppler compensation worked Fer, IW1DTU. Fer was running a TS-790 with 60 watts output into 55 element yagi on L-Band.

David, G8OQW running an Icom 910 into a horizontal 19 element yagi on a tripod mount on his patio reported, "At 60 degrees elevation I just made it in but very briefly and with a very scratchy signal. On January 1 I had and excellent pass, accessed repeater at best range yet, 750Km still using only 170w max ERP from tripod mounted 19 element horizontal yagi."

Jeff, K7WIN reported working Ron, N6PAA on January 1, "I could hear you for over 2 minutes prior to our QSO and our QSO lasted just about 2 minutes. I couldn't get in until ISS was above 15 degrees as I only have 10 watts on L Band."

[ANS thanks Frank, KA3HDO, AMSAT-NA V.P. for Human Spaceflight Programs and ARISS International Chairman for the above information]

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SB SAT @ AMSAT $ANS-004.05
ARISS Report

AMSAT News Service Bulletin 004.05
From AMSAT HQ SILVER SPRING, MD.
January 1, 2009
To All RADIO AMATEURS
BID: $ANS-004.05

All,

Happy New Year!!

The ARISS team hopes you are all enjoying the diverse amateur radio opportunities that have occurred on the ISS over the past several weeks. We want to thank Mike Fincke, KE5AIT, for his outstanding support to the ISS Ham Radio community. His efforts have been phenomenal!

This e-mail provides an update of the ARISS special event opportunities for the next two weeks. As previously mentioned, the ARISS team is currently celebrating 25 years of amateur radio operations from space.

This past week, the ISS Ham radio system was configured in the L/V crossband repeater mode. This configuration will continue through to Saturday when a school contact is scheduled around 10:35 UTC. After the

school contact on Saturday January 3, it is our plans to have Mike Fincke reconfigure the radio to support V/U crossband repeater operations. As a reminder, that configuration has a 145.99 MHz uplink frequency including PL tone of 67.0 and a 437.80 MHz downlink frequency. All repeater operations are being performed in low power (5 W) mode. It is our intent to keep the repeater active in this configuration for 2 weeks (through January 17).

We are also considering follow-on experimental operations of the 9600 baud packet radio system and the L/V crossband repeater. Stay tuned for future updates.

As a reminder, a special certificate is being developed for those who communicate with the ISS. This certificate will be awarded to those that have had 2 way communications with the ISS on Voice, Packet (APRS), or through the voice repeater. And those that have heard the ISS from space in any of the ARISS operations modes (Voice, SSTV, School Contact, Voice Repeater, Digital). Valid dates to qualify for certificate: November 30 to January 15.

To receive the certificate:
A) Please note on your QSL the ARISS mode of operation (e.g. SSTV, voice, school, etc) and whether the contact with you was 1 way (receive only) or 2 way.
B) Send your SASE to the normal ARISS QSL volunteer distributor in your area of the world.
C) On the outside of the QSL envelope, please include the words "25th Anniversary Certificate"
D) Make sure your envelope is big enough to accept an 8.5 by 11 inch certificate and includes the proper postage.
E) Go to www.ariss.org if you do not know where to send your QSL and please use one of the standard international QSL distributors that are noted on the Web page.

Important note: We will be sending your certificate to the volunteer distributors in bulk AFTER the event is over. (This saves workload and money). So do not expect to see it until 1-2 months after the event closes on January 15.

We would like to remind everyone that ISS flight requirements related to EVA and vehicle activity may require the radio to be off for some portion of this schedule. And school contacts and general QSO opportunities by the crew will also preempt this schedule for short periods of time. (But remember that if you hear these, you still qualify for a commemorative certificate).

Continue to enjoy the ARISS ops on ISS in 2009!

73, Frank Bauer, KA3HDO
AMSAT-NA V.P. for Human Spaceflight Programs
ARISS International Chairman

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SB SAT @ AMSAT $ANS-004.06
Amateur Radio on the International Space Station (ARISS) Status Report
December 29, 2008

AMSAT News Service Bulletin 004.06
From AMSAT HQ SILVER SPRING, MD.
January 4, 2009
To All RADIO AMATEURS
BID: $ANS-004.06

1. Upcoming School Contacts

An Amateur Radio on the International Space Station (ARISS) contact has been scheduled with Technopolis in Mechelen, Belgium on Saturday, January 3 at 10:35 UTC via telebridge station VK4KHZ in Australia. The mission of Technopolis is to bring science and technology to the public. The center has permanent and temporary exhibits and organizes workshops, school activities and other outreach activities. The ARISS contact will be open to all school children 6 -18 years of age and will be supported through a workshop, lecture or science show.

Aaxam Jatiya Vidyalaya in Guwahati, India has been scheduled for an Amateur Radio on the International Space Station (ARISS) contact on Wednesday, January 7 at 07:54 UTC via telebridge station W6SRJ in California. Approximately 1300 students are enrolled at the school. All students are taught in Assamese with English taught as a compulsory second language.

2. Michigan Museum Contact Successful

Ann Arbor Hands-On Museum in Ann Arbor, Michigan participated in an Amateur Radio on the International Space Station (ARISS) contact on Saturday, December 27. Approximately 100 people witnessed the contact as 13 students posed one question each to Mike Fincke, KE5AIT. The audio was fed into the EchoLink AMSAT and JK1ZRW servers and received 15 connections from 8 countries. Three newspapers sent reporters to cover the event. The Ann Arbor News posted an article to its Web site. See: http://www.mlive.com/annarbor/stories/index.ssf?/base/news-30/1230450021247830.xml&coll=2

To view the Ann Arbor Chronicle story, go to: http://annarborchronicle.com/2008/12/27/to-infinity-and-beyond/

3. Spaceflight Participants Interviewed

Technology Review interviewed the ISS spaceflight participants. The Amateur Radio on the International Space Station (ARISS) equipment is mentioned. Go to: http://www.technologyreview.com/communications/21808/?a=f

4. AMSAT Report Posted

The Radio Amateur Satellite Corporation (AMSAT) held its 2008 Annual Meeting and Space Symposium in Atlanta, Georgia in October. The president's State of AMSAT report includes a status on SuitSat-2. The report has been posted to the AMSAT Web site. See: http://www.amsat.org/amsat-new/pdfs/2008_Annual_Meeting/2008-10-25_WD4ASW_Annual_Meeting.pdf

[ANS thanks Carol, KB3LKI, for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

73,
This week's ANS Editor,
Dee Interdonato, NB2F
nb2f at amsat dot org